FLM-420-I8R1-S Octo-input Interface Module with Relay

BOSCH
Invented for life

- Individually selectable monitoring functions (EOL or contact) for the eight inputs each
- Maximum switching capacity 2 A / 30 V DC or 0.5 A / 42.4 V AC
- Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators
- Easy wiring thanks to pluggable terminal blocks

The FLM-420-I8R1-S Octo-input Interface Module with Relay allows the monitoring of up to eight inputs. Additionally, it features a change-over contact relay for providing a potential-free output contact.
It is a 2-wire LSN element. When connected to the fire panels FPA-5000 and FPA-1200, the interface module offers the enhanced functionality of LSN improved technology.

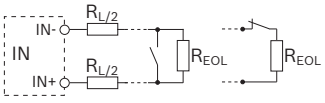
Functions

Monitoring functions of the inputs
The FLM-420-I8R1-S Octo-input Interface Module provides two monitoring functions:
1. Monitoring of a line by an EOL resistor
2. Monitoring of a potential-free contact

The monitoring functions of the eight inputs can be selected individually by setting the corresponding addresses.

Line monitoring with EOL resistor
The monitoring with EOL resistor can be activated individually for each of the inputs. The EOL resistor has a standard resistance of 3.9 kΩ.
The interface module detects

- Standby
- Triggering in the event of a short circuit
- Triggering in the event of line interruption.

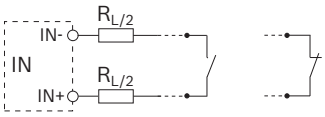


Position	Description
R_{Σ}	Overall line resistance with $R_{\Sigma} = R_{L/2} + R_{L/2} + R_{EOL}$
$R_{L/2}$	Line resistance

The following line conditions will be reliably detected if the overall line resistance is within the specified range:

Line condition	Overall line resistance R_{Σ}
Standby	1500 Ω to 6000 Ω
Short circuit	< 800 Ω
Interruption	> 12 000 Ω

Contact monitoring



The interface module evaluates the operating conditions "open" or "closed". The normal operating condition can be programmed for each input. Contact monitoring has a pulse intensity of 8 mA.

Change-over contact relay

The maximum contact load (resistive load) is 2 A /

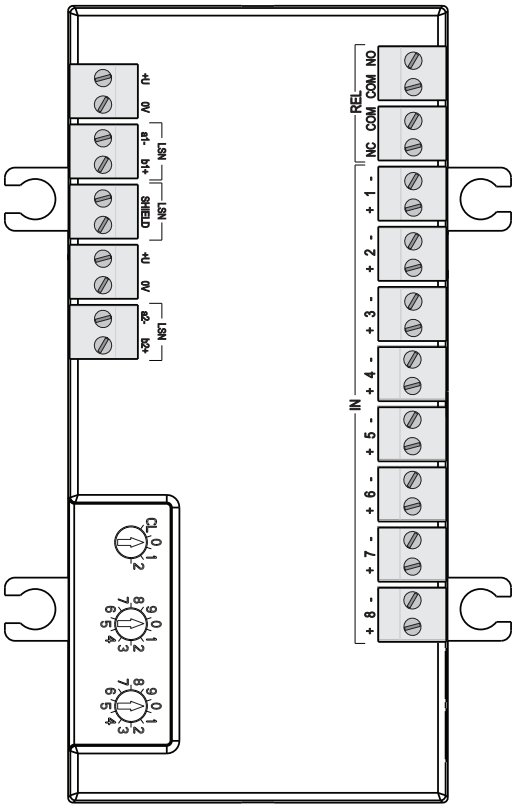
Certifications and approvals

Region	Certification	
Germany	VdS	G 208184 FLM-420-I8R1-S
Europe	CE	FLM-420-I8R1-S
	CPD	0786-CPD-20560 FLM-420-I8R1-S
Ukraine	MOE	UA1.016.0070265-11 FLM-420-I8R1-S

Description		Connection
	+U | 0V	Auxiliary power supply (support points to loop through)
LSN	a1- | b1+	LSN incoming
LSN	SHIELD	Cable shielding
	+U | 0V	Auxiliary power supply (support points to loop through)
LSN	a2- | b2+	LSN outgoing
IN	1 ... 8: + | -	Input 1 to input 8
REL	NC | COM | COM | NO	Change-over relay (NC contact / COM, COM / NO contact

- Can be connected to the fire panels FPA-5000 and FPA-1200 and the classic LSN control panels BZ 500 LSN, UEZ 2000 LSN and UGM 2020.
- Programming is done with the programming software of the fire panel.
- The LSN connection is established by the two wires of the LSN line.
- The activation of the inputs IN 1...8 has to be carried out electrically isolated from LSN (e. g. with relay contact, pushbutton, etc.).
- The inputs must have a minimum activation time of 3.2 s.
- The maximum cable length of all inputs connected to the loop or stub is 500 m in total. Additionally, all outputs which are not electrically isolated from LSN must be included in the total line length calculation (e.g. peripherals connected via C points). With UEZ 2000 LSN and UGM 2020, the limitation to 500 m applies to each Network Processing Converter (NVU).

Installation/configuration notes



- The interface module has terminals blocks to allow a second pair of wires to be looped through to an auxiliary power supply.
- The cables are fed through rubber bushings or PG cable glands.
- The pluggable terminal blocks allow for an easy wiring even if he interface module is built in.
- Use included spacers when mounting on uneven surface.
- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.
- In order to comply with EN50130-4:2011, shielded cable is required for the installation. The shielded cable needs to be applied for:
  - all loops and stubs which are equipped with one or more modules.
  - all inputs which are connected on the module

  The cable shield wire for the LSN cable has to be connected properly according LSN specifications.

Technical specifications

Electrical

LSN input voltage (V DC)	15 ... 33
Max. current consumption from LSN (mA)	5.5
Inputs, independent	8
Line monitoring: EOL resistor, nominal (kΩ) Detected line conditions (Ω) with overall line resistance $R_{\Sigma} = R_{L/1} + R_{L/2} + R_{EOL}$	3.9 Standby: 1500 ... 6000 Interruption: > 12000 Short circuit: < 800
Contact monitoring: Max. current consumption (mA)	8
Min. activation time of the inputs IN 1...8 (s)	3.2
Change-over relay, low voltage	NC / COM, COM / NO
Contact load: Max. switching capacity (A / V DC; A / V AC) Min. switching capacity (mA / mV DC; mA / mV AC) Max. frequency (Hz)	2 / 30; 0.5 / 42.4 0.01 / 10; 0.01 / 10 100